IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS

In re Patent Application of: **FLICK**	Examiner: **B. SWARTHOUT**
Serial No. **10/648,931**	Art Unit: **2636**
Filing Date: **AUGUST 27, 2003**	Attorney Docket No. **58178**
For: **VEHICLE SECURITY DEVICE HAVING PRE-WARN FEATURES AND RELATED METHODS**	

APPELLANT'S APPEAL BRIEF

MS Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith is Appellant's Appeal Brief together with the requisite $250.00 small entity fee for filing a brief. If any additional extension and/or fee is required, authorization is given to charge Deposit Account No. **01-0484**.

(1) Real Party in Interest

The real party in interest is Omega Patents, L.L.C., assignee of the present application as recorded at reel 014447, frame 0213.

(2) Related Appeals and Interferences

At present there are no related appeals or interferences.

(3) Status of the Claims

Claims 1-32 are pending in the application. Claims 1, 4-8, 10, 17-20, 22, 23, 26-30, and 32 stand rejected and are on appeal in this proceeding. Claims 11-16 are allowed, and Claims 2, 3, 9, 21, 24, 25, and 31 have been objected to as being dependent upon a rejected base claim, but were indicated as being allowable if rewritten in independent form.

(4) Status of the Amendments

All amendments have been entered and there are no further pending amendments. A copy of the claims involved in this appeal is attached hereto as Appendix A.

(5) Summary of the Claimed Subject Matter

Independent Claim 1 is directed to a pre-warn vehicle security device **20** for a vehicle **21** comprising a data communications bus **22** extending throughout the vehicle, and the data communications bus carries data and address information thereover. The vehicle **21** further includes an alert indicator **24**, and an alarm controller **25** interfacing with the data communications bus **22** extending throughout the vehicle and carrying data and address information. See page 8, lines 1-8 (paragraph 0024), and FIG. 1 of the present application, which is reproduced below for the Board's convenience.

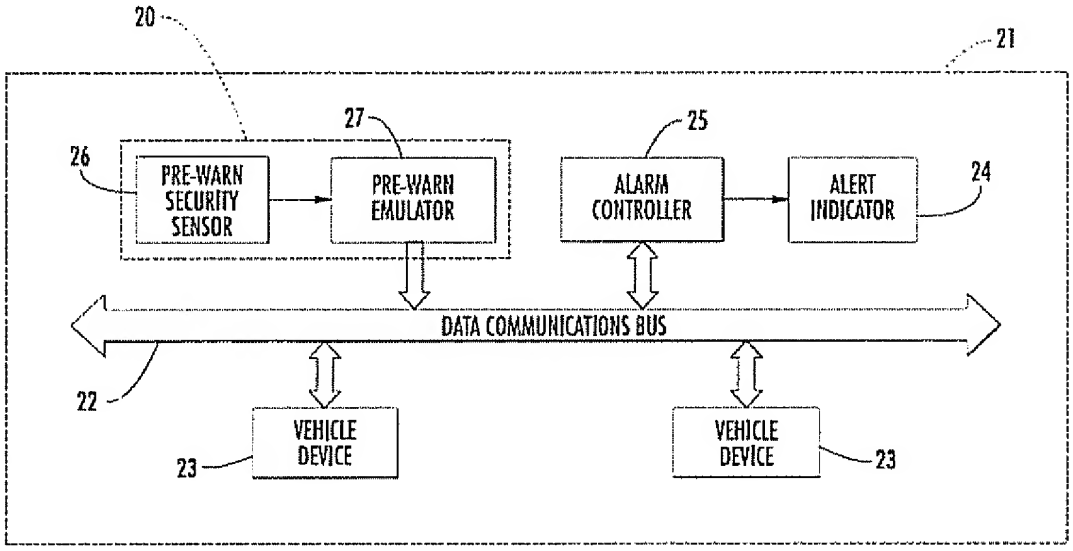

FIG. 1 of the present application

When in an armed mode, the alarm controller **25** causes the alert indicator **24** to generate an alarm indication responsive to a high security threat level. See page 8, line 15 through page 9, line 8 (paragraphs 0025 and 0026). The pre-warn vehicle security device **21** includes a pre-warn vehicle security sensor **26** for sensing a security threat level lower than the high security threat level. See page 9, lines 9-19 (paragraph 0027) and FIGS. 1 and 2 (reproduced below).

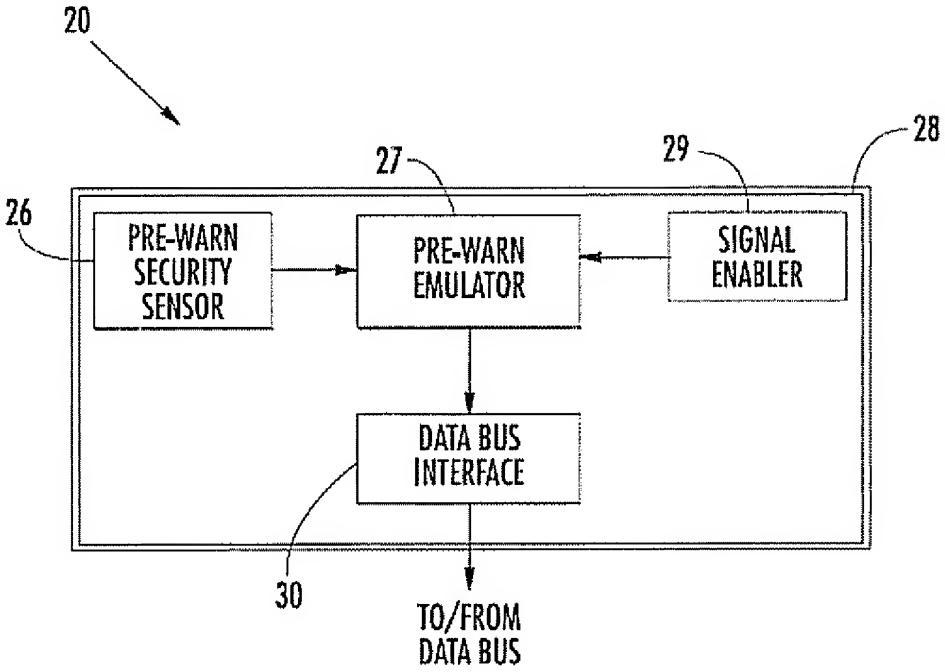

FIG. 2 of the present application

The pre-warn vehicle security device **21** further includes and a pre-warn emulator **27** for generating at least one signal on the vehicle data communications bus **22** extending throughout the vehicle **21** and carrying data and address information responsive to the pre-warn vehicle security sensor **26** so that the alarm controller **25** causes the alert indicator **24** to generate an emulated pre-warn indication different from the alarm indication. See page 10, line 29 through page 10, line 6 (paragraph 0029) and FIGS. 1 and 2.

Independent Claim 17 is directed to a related pre-warn vehicle security device **20** for a vehicle **21** comprising a data communications bus **22** extending throughout the vehicle, and the

data communications bus carries data and address information thereover. The vehicle **21** further includes an alert indicator **24**, and an alarm controller **25** interfacing with the data communications bus **22** extending throughout the vehicle and carrying data and address information. See page 8, lines 1-8 (paragraph 0024) and FIG. 1 of the present application. When in an armed mode, the alarm controller **25** causes the alert indicator to generate an alarm indication responsive to a high security threat level. See page 8, line 15 through page 9, line 8 (paragraphs 0025 and 0026). The pre-warn vehicle security device **21** includes a pre-warn vehicle security sensor **26** for sensing the high security threat level, and for sensing a threat level lower than the high security threat level. See page 9, lines 9-19 (paragraph 0027) and FIGS. 1 and 2. The pre-warn vehicle security device **21** further includes a pre-warn emulator **27** for generating a high security threat level signal on the data communications bus **22** extending throughout the vehicle **21** and carrying data and address information responsive to the sensed high security threat level. See page 11, line 30 through page 12, line 8 (paragraph 0034) and FIGS. 1 and 2. The pre-warn emulator **27** is also for generating at least one armed mode signal on the data communications bus **22** extending throughout the vehicle **21** and carrying data and address information responsive to the sensed low security threat level so that the alarm controller **25** causes the alert indicator **24** to generate at least one armed mode indication as an emulated pre-warn indication. See page 12, line 22 though page 13, line 3 (paragraph 0036).

Independent Claim 23 is directed to a related method for upgrading a vehicle security system in a vehicle **21** including a data communications bus **22** extending throughout the vehicle, where the data communications bus carries data and address information thereover. The vehicle security system includes an alert indicator **24** and an alarm controller **25** interfacing with the data communications bus **22** extending throughout the vehicle **21** and carrying data and address information. See page 8, lines 1-8 (paragraph 0024), and FIG. 1 of the present application. When in an armed mode, the alarm controller **25** causes the alert indicator **24** to generate an alarm indication responsive to a high security threat level. See page 8, line 15 through page 9, line 8 (paragraphs 0025 and 0026). The method includes installing a pre-warn vehicle security sensor **26** in the vehicle **21** for sensing a threat level lower than the high security threat level. See page 9, lines 9-19 (paragraph 0027) and FIGS. 1 and 2. Moreover, the method further includes interfacing a pre-warn emulator **27** with the vehicle data communications bus **22** extending throughout the vehicle **21** and carrying data and address information which, responsive to the pre-warn vehicle security sensor **26**, generates at least one signal on the data communications bus extending throughout the vehicle. The at least one signal carries data and address information so that the alarm controller **25** causes the alert indicator **24** to generate an emulated pre-warn indication different from the alarm indication. See page 10, line 29 through page 10, line 6 (paragraph 0029) and FIGS. 1 and 2.

(6) Grounds of Rejection to be Reviewed On Appeal

Claims 1, 4-8, 10, 17-20, 22, 23, 26-30, and 32 stand rejected under 35 U.S.C. §103(a) over Hwang (U.S. Patent No. 5,216,407) in view of either Suman et al. (U.S. Patent No. 5,469,298) or Nykerk (U.S. Patent No. 5,315,285), and in still further view of Boreham et al. (U.S. Patent No. 6,005,478).

(7) Argument

As will be described in greater detail below, Applicant respectfully submits that the Examiner mischaracterizes the teachings of the prior art, and that the proposed combination of references therefore fails to teach or fairly suggest all of the recitations of the above-noted independent claims. Moreover, Applicant also respectfully submits that there is no proper suggestion or motivation to make the selective combinations of references proposed by the Examiner.

A. The Prior Art

Hwang is directed to a prealarm system for an anti-theft alarm where a signal from a displacement/vibration detector **200** is picked up by a one-shot timer circuit **102**. If no other activation signal is picked up after the first signal is received, a main control alarm circuit **103** is activated for (1) driving a siren circuit **105** to generate a short chirp sound as an audible warning, and (2) a flashing circuit **106** to flash a light for a preset period of time as a visible warning. If the number of activation signals received subsequent to the first are

greater than a predetermined threshold number, or the activation signal continues for a predetermined period of time, the main control alarm circuit is activated for driving, (1) the siren circuit to give a normal audible signal alarm, and (2) both, the flashing circuit for flashing a light and a dome light control **108** to provide visible signals. FIGS. 1 and 2 of Hwang are reproduced below.

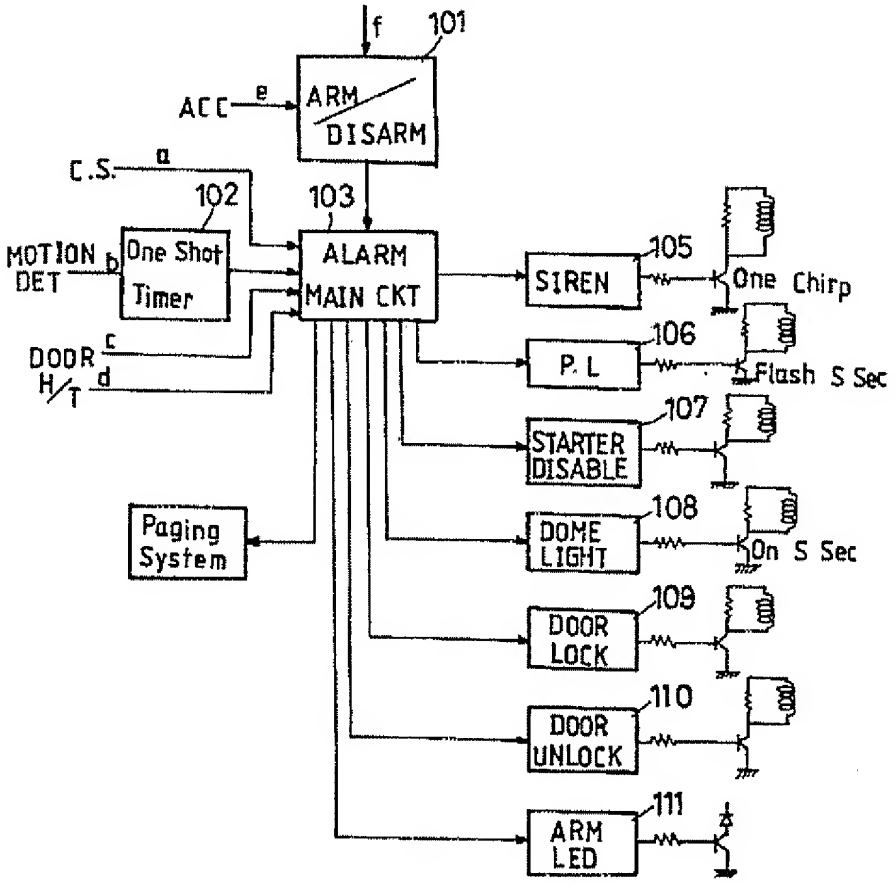

FIG. 1 of Hwang

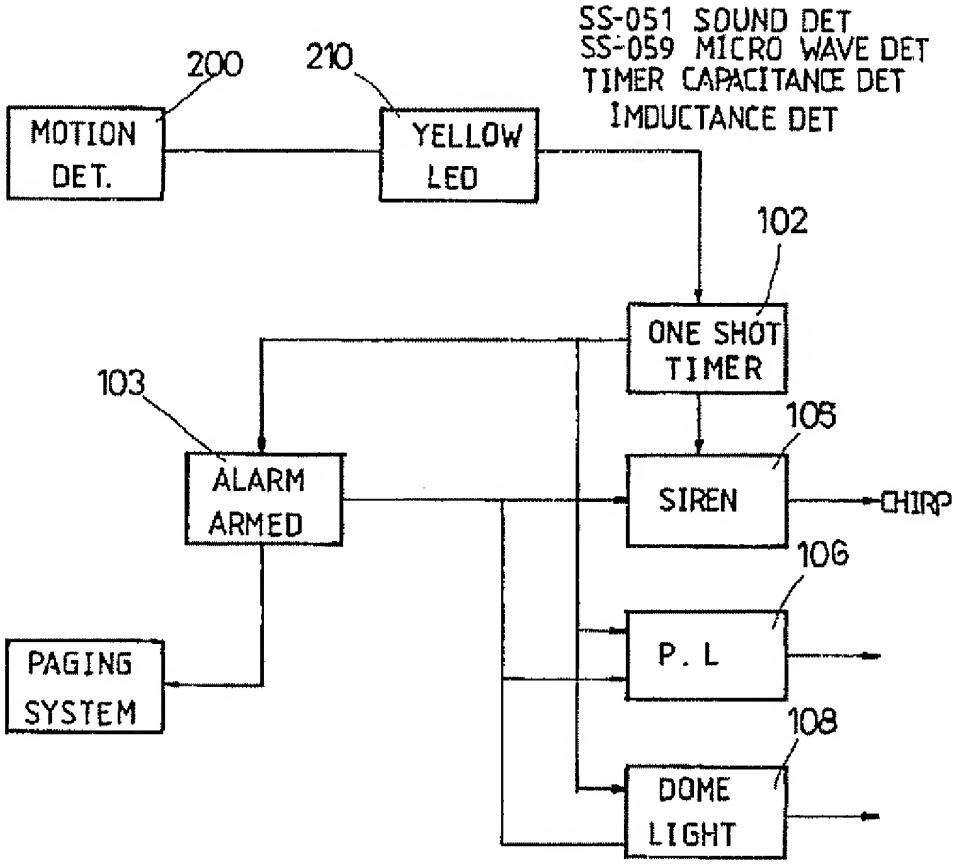

FIG. 2 of Hwang

Suman et al. is directed to a vehicle **13** that includes a mirror **11** mounted near the roof of the vehicle for reflecting an image generated by a display source **62**. The display source **62** and mirror **11** are shaped and positioned to provide a virtual image of the image generated by the display source which is focused at infinity. The display source **62** generates an object image of information such as the vehicle heading, the vehicle speed, keyless entry training information, garage door opener

training information, outside temperature, and inside temperature, as well as warnings such as excessive water temperature, low oil pressure, alternator, seat belt unfastened and low fuel level. See col. 4, lines 46-52 of Suman et al. The Examiner cites Suman et al. because, the programmable control circuit for the display source include a data bus **111** having eleven parallel data lines that terminates in input interface circuitry **100**, which includes individual input connection points **100-110** each for a respective vehicle device, one of which is a tamper switch **105**. FIGS. 1 and 6A of Suman et al. are reproduced below.

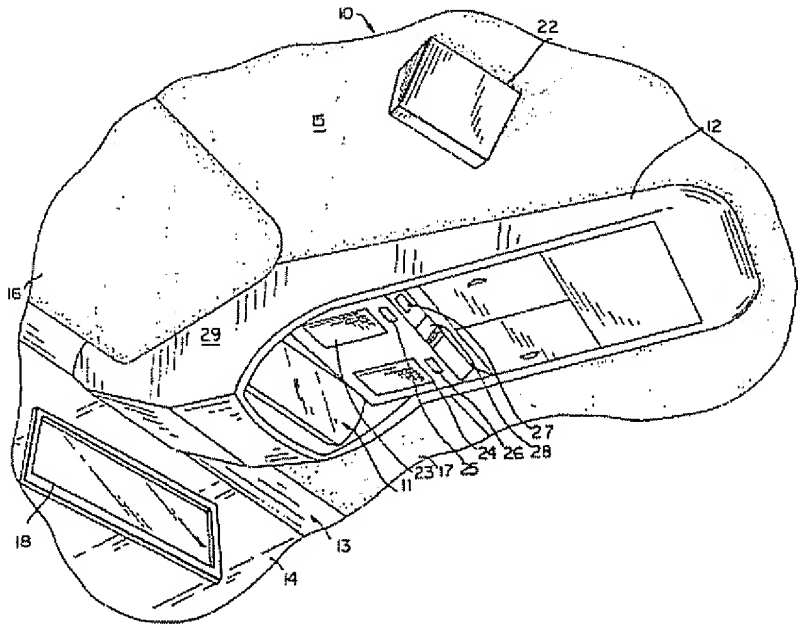

FIG. 1 of Suman et al.

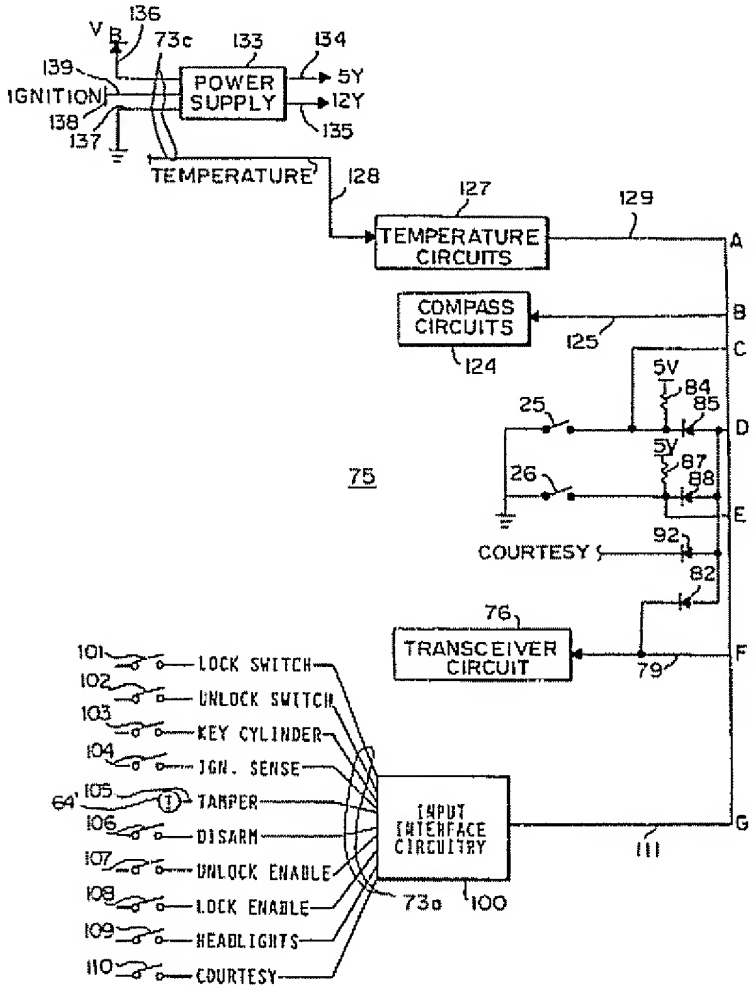

FIG. 6A of Suman et al.

Nykerk is directed to a self-contained alarm system **55** that senses the presence of a person sufficiently near a protected object, such as an automobile **12**, to inflict damage thereto, and provides verbal warnings to the person. The alarm system **55** includes a proximity detector **59** that senses the

proximity of a person to the protected object, and voice generation circuits **84** for generating vocal signals. The vocal signals instruct the person to back away from the protected object in an attempt to prevent the person from inflicting any damage to the object. The Examiner notes that the Nykerk self-contained alarm system **55** includes an internal data bus **64**. FIGS. 1, 4 and 7A of Nykerk are reproduced below.

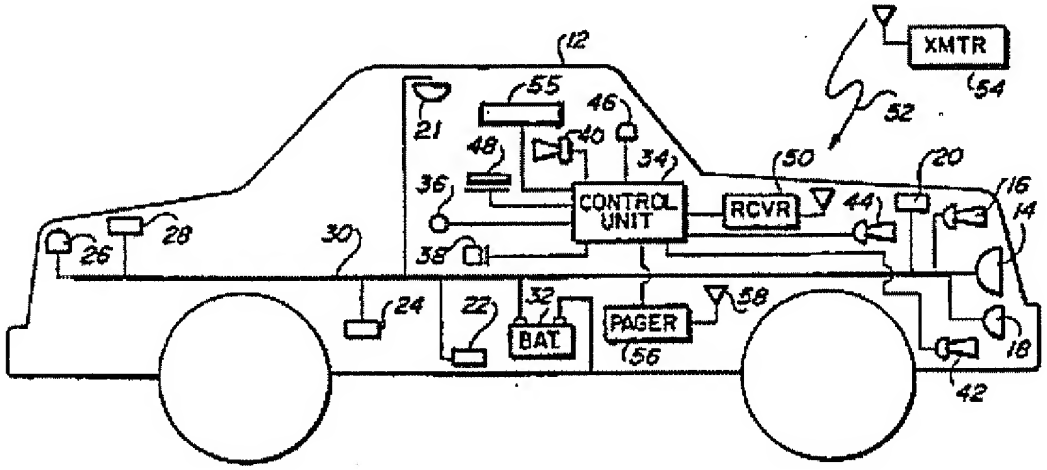

FIG. 1 of Nykerk

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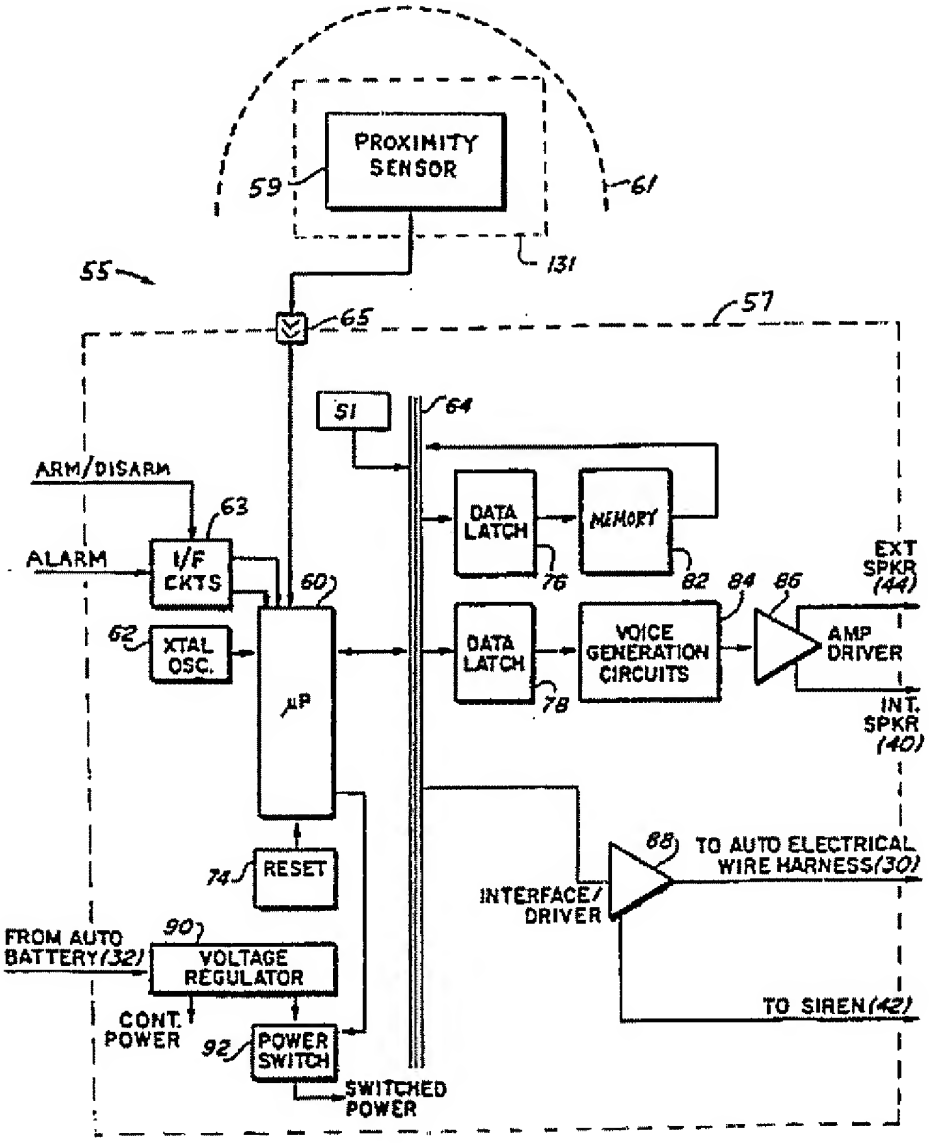

FIG 4 of Nykerk

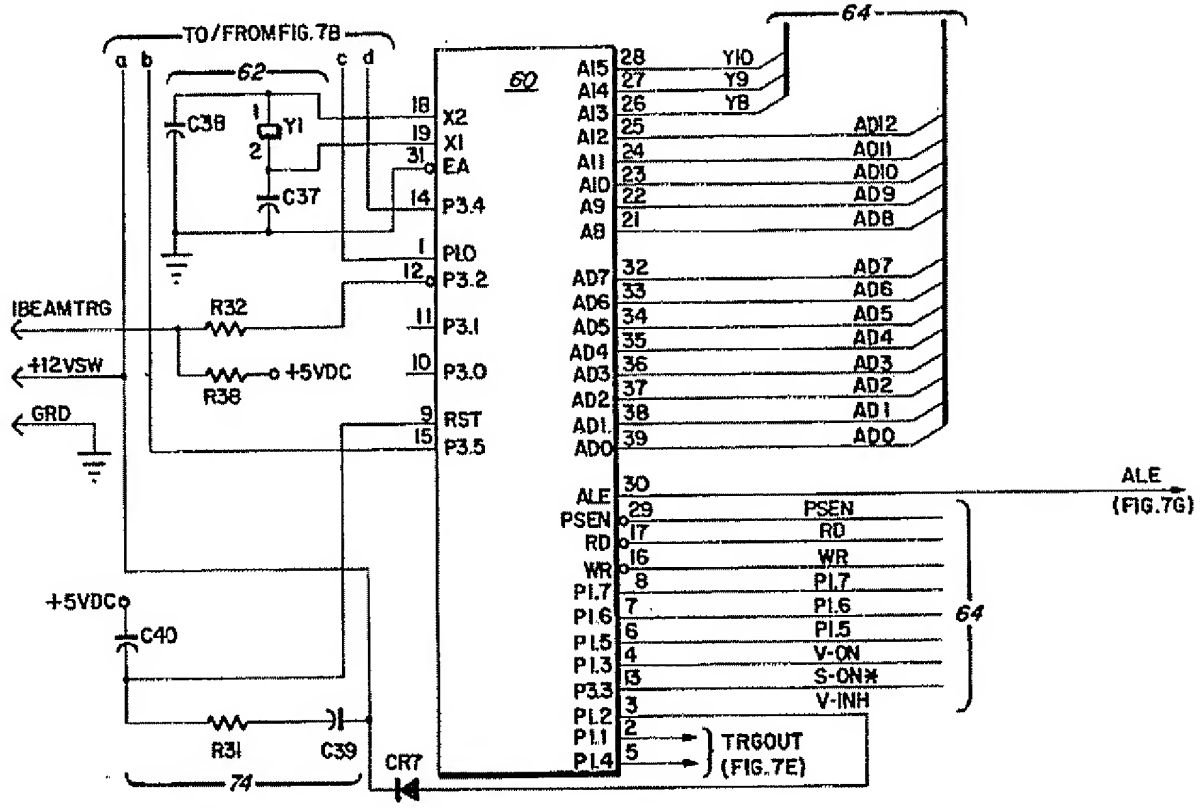

FIG. 7A of Nykerk

Furthermore, Boreham et al. is directed to a siren unit **2** including a CPU **4** for controlling activation of a siren loudspeaker **8** at a selected frequency based on a frequency control signal, and a serial interface **12** for providing the frequency control signal to the CPU. The serial interface **12** further provides a volume control signal and a duration control signal. The siren loudspeaker **8** is activated in response to a trigger signal received by the serial interface **12**, which may be

a plurality of predetermined data bits. The siren loudspeaker **8** can be activated based upon a data communications packet received and provided by the serial interface **12**, and also by a high/low trigger pulse. See, e.g., col. 2, lines 41-53, col. 4, lines 28-42, and FIG. 1 of Boreham et al., which is reproduced below.

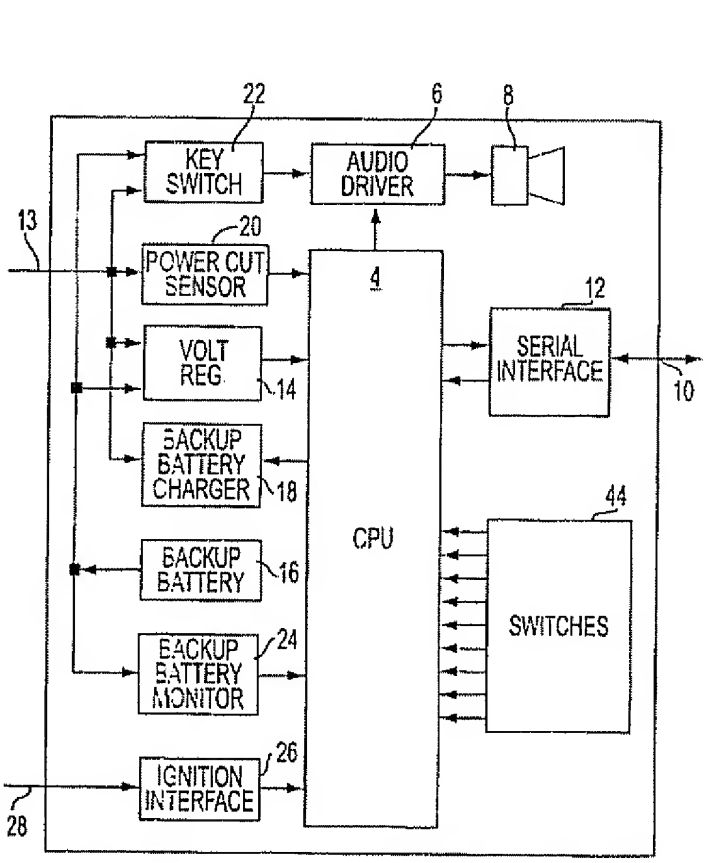

FIG. 1 of Boreham et al.

B. The Three-Way Hwang/Suman et al./Boreham et al. Rejection

i) The Selective Combination of References Fails to Teach or Fairly Suggest All of the Claimed Recitations.

The Examiner states on page 2 of the Final Office Action that Hwang teaches a "prealarm emulator 102 for generating a signal on [a] data communication line to alarm controller 103 to cause alert indicator 105 to generate a prealarm different than a full alarm." However, the above-noted independent claims recite that the pre-warn emulator is for generating at least one signal on the vehicle data communications bus which carries data and address information responsive to the pre-warn vehicle security sensor. The alleged emulator that the Examiner contends is equivalent to the claimed pre-warn emulator is the one shot timer **102**, which is a circuit that simply generates a variable width pulse as its output. See, e.g., http://www.utm.edu/staff/leeb/3b3.htm, a printout of which is included in the attached Evidence Appendix B. Accordingly, this one shot circuit is not generating data and address information, as is the case with the claimed pre-warn emulator.

Neither Suman et al. nor Boreham et al. provide this noted deficiency. While Suman et al. teaches a tamper switch **105** that connects to a single input of the input interface circuitry **100**, Suman et al. is silent with respect to this switch providing address and data information. To the contrary, the tamper switch

would not need to provide addressing information, since it has its own designated input to the input interface circuitry. Moreover, Boreham et al. is directed to a siren unit. While this reference teaches that a vehicle security controller may provide a code to the siren unit **2** via the serial interface **12**, it fails to teach or fairly suggest a pre-warn emulator that provides at least one signal carrying data and address information for use by such a controller as recited in the above-noted independent claims. Accordingly, because the proposed combination of references fails to teach or fairly suggest all of the elements recited in the above-noted independent claims, this rejection should be overturned for this reason alone.

ii) There Is No Proper Suggestion or Motivation to Combine the References as the Examiner Proposes.

Applicant respectfully submits that there is no proper motivation to selectively combine the above-noted references. For example, the Examiner contends that it would have somehow been obvious to connect a pre-warn system as disclosed by Hwang over a data bus as suggested by the Suman et al. patent, purportedly to take advantage of wiring already existing in a vehicle without having to add supplemental wiring to communicate sensed data in a vehicle alarm system. Final Office Action, page 3. Yet, the data bus in the Suman et al. system is internal to the display unit, and does not extend throughout the vehicle. Rather than promoting any type of wiring savings, Suman et al. teaches using an

individual connection wire from the tamper switch **105** (and numerous other components) to the display unit, rather than somehow attempting to extend this internal data bus throughout the vehicle. Hwang uses the same type of single wire connection for its pre-warn sensor. Therefore, one of ordinary skill in the art would not have looked to the Suman et al. patent to somehow save supplemental wiring, because Suman et al. uses the same wiring approach as Hwang (i.e., running an individual connection wire from the pre-warn device to other components in the vehicle).

The Examiner further contends that adding addressing over a vehicle data bus as suggested by the Boreham et al. patent will permit communication with specific vehicle systems that have individual addresses. As discussed above, all of the noted references fail to teach or fairly suggest that a pre-warn emulator could or even should communicate over a vehicle data bus in this fashion. To the contrary, the only motivation to provide the claimed pre-warn emulator for generating a signal on the vehicle data communications bus extending throughout the vehicle and carrying data and address information comes from Applicant's own specification. Accordingly, the rejection of the independent claims based upon Hwang, Suman et al., and Boreham et al. should also be overturned for this reason as well.

C. The Three-Way Hwang/Nykerk/Boreham et al. Rejection

i) The Selective Combination of References Fails to Teach or Fairly Suggest All of the Claimed Recitations.

As discussed in Section 7.B.i above, Hwang fails to teach or fairly suggest a pre-warn emulator for generating at least one signal on the vehicle data communications bus which carries data and address information responsive to a pre-warn vehicle security sensor, and Boreham et al. also fails to provide this noted deficiency. As also noted above, Nykerk discloses a self-contained alarm system **55** with an internal data bus **64** that does not extend throughout a vehicle. Accordingly, this reference similarly fails to provide a pre-warn emulator for generating at least one signal on a vehicle data communications bus extending throughout a vehicle and carrying data and address information responsive to a pre-warn vehicle security sensor. As such, this proposed combination of references also fails to teach or fairly suggest all of the elements recited in the above-noted independent claims, and the Hwang/Nykerk/Boreham et al. rejection should therefore be overturned.

ii) There Is No Proper Suggestion or Motivation to Combine the References as the Examiner Proposes.

Applicant respectfully submits that there is no proper motivation to selectively combine the Hwang, Nykerk, and Boreham et al. references as the Examiner proposes. The Examiner contends that it would have been obvious to connect a pre-warn system as disclosed by Hwang over a vehicle data bus as suggested by the Nykerk patent for the same reasons as the Hwang/Suman et al. combination above. Applicant submits that the Hwang patent already provides a pre-warn function using existing wiring, and, therefore, one skilled in the art would not look to the Nykerk patent to save supplemental wiring because there is no need for supplemental wiring in the first place. Moreover, Nykerk uses a single wire connection between the proximity sensor **59** and the microprocessor **60** via a designated connector **65**, so individual wire connectivity is still required with the Nykerk system. See FIG. 4 (above) and col. 11, lines 19-21 of Nykerk.

The Examiner further suggests adding addressing over the data bus of the Hwang/Nykerk combination as suggested by the Boreham et al. patent for the same reasons as the Hwang/Suman et al. patents. Yet, here again, these references fail to teach or fairly suggest that a pre-warn emulator could or even should communicate over a vehicle data bus in this fashion. To the contrary, the only motivation to provide the claimed pre-warn emulator for generating a signal on the vehicle data communications bus extending throughout the vehicle and carrying

data and address information comes from Applicant's own specification. Accordingly, the rejection of the independent claims based upon Hwang, Nykerk, and Boreham et al. should also be overturned for this reason as well.

CONCLUSIONS

In view of the foregoing arguments, it is submitted that all of the claims are patentable over the prior art. Accordingly, the Board of Patent Appeals and Interferences is respectfully requested to reverse the earlier unfavorable decision by the Examiner.

Respectfully submitted,

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APPENDIX A - CLAIMS ON APPEAL FOR U.S. PATENT APPLICATION SERIAL NO. 10/648,931

1. A pre-warn vehicle security device for a vehicle comprising a data communications bus extending throughout the vehicle, the data communications bus carrying data and address information thereover, an alert indicator, and an alarm controller interfacing with the data communications bus extending throughout the vehicle and carrying data and address information and when in an armed mode causing the alert indicator to generate an alarm indication responsive to a high security threat level, the pre-warn vehicle security device comprising:

a pre-warn vehicle security sensor for sensing a security threat level lower than the high security threat level; and

a pre-warn emulator for generating at least one signal on the vehicle data communications bus extending throughout the vehicle and carrying data and address information responsive to said pre-warn vehicle security sensor so that the alarm controller causes the alert indicator to generate an emulated pre-warn indication different from the alarm indication.

2. The pre-warn vehicle security device of Claim 1 wherein said pre-warn emulator, responsive to said pre-warn vehicle security sensor, sequentially generates a high security threat level signal and a disarmed mode signal on the data communications bus extending throughout the vehicle and carrying data and address information.

3. The pre-warn vehicle security device of Claim 2 wherein said pre-warn emulator sequentially generates the high security threat level signal and the disarmed mode signal less than about five seconds apart.

4. The pre-warn vehicle security device of Claim 1 wherein said pre-warn emulator, responsive to said pre-warn vehicle security sensor, generates a plurality of armed mode signals on the data communications bus extending throughout the vehicle and carrying data and address information.

5. The pre-warn vehicle security device of Claim 1 wherein the pre-warn indication has a shorter duration than the alarm indication.

6. The pre-warn vehicle security device of Claim 1 wherein the pre-warn indication is audible and has a lesser volume than the alarm indication.

7. The pre-warn vehicle security device of Claim 1 wherein said pre-warn vehicle security sensor also senses the high security threat level for causing the alarm indicator to generate the alarm indication.

8. The pre-warn vehicle security device of Claim 1 further comprising a housing carrying said pre-warn vehicle security sensor and said pre-warn emulator.

9. The pre-warn vehicle security device of Claim 1 further comprising a signal enabler for enabling said pre-warn emulator to operate using a desired set of signals for communicating with the alarm controller via the data communications bus extending throughout the vehicle and carrying data and address information from a plurality of sets of signals for different alarm controllers.

10. The pre-warn vehicle security device of Claim 1 wherein said pre-warn vehicle security sensor comprises at least one of a motion sensor and a shock sensor.

11. A pre-warn vehicle security device for a vehicle comprising a data communications bus, an alert indicator, and an alarm controller interfacing with the data communications bus and when in an armed mode causing the alert indicator to generate an alarm indication responsive to a high security threat level, the pre-warn vehicle security device comprising:

a pre-warn vehicle security sensor for sensing the high security threat level, and for sensing a low security threat level lower than the high security threat level; and

a pre-warn emulator for generating a high security threat level signal on the data communications bus responsive to the sensed high security threat level, and for sequentially generating the high security threat level signal and a disarmed mode signal on the data communications bus responsive to the

sensed low security threat level so that the alarm controller causes the alert indicator to generate an emulated pre-warn indication different from the alarm indication.

12. The pre-warn vehicle security device of Claim 11 wherein said pre-warn emulator sequentially generates the high security threat level signal and the disarmed mode signal less than about five seconds apart.

13. The pre-warn vehicle security device of Claim 11 wherein the pre-warn indication has a shorter duration than the alarm indication.

14. The pre-warn vehicle security device of Claim 11 further comprising a housing carrying said pre-warn vehicle security sensor and said pre-warn emulator.

15. The pre-warn vehicle security device of Claim 11 further comprising a signal enabler for enabling said pre-warn emulator to operate using a desired set of signals for communicating with the alarm controller via the data communications bus from a plurality of sets of signals for different alarm controllers.

16. The pre-warn vehicle security device of Claim 11 wherein said pre-warn vehicle security sensor comprises at least one of a motion sensor and a shock sensor.

17. A pre-warn vehicle security device for a vehicle comprising a data communications bus extending throughout the vehicle, the data communications bus carrying data and address information thereover, an alert indicator, and an alarm controller interfacing with the data communications bus extending throughout the vehicle and carrying data and address information and when in an armed mode causing the alert indicator to generate an alarm indication responsive to a high security threat level, the pre-warn vehicle security device comprising:

a pre-warn vehicle security sensor for sensing the high security threat level, and for sensing a threat level lower than the high security threat level; and

a pre-warn emulator for generating a high security threat level signal on the data communications bus extending throughout the vehicle and carrying data and address information responsive to the sensed high security threat level, and for generating at least one armed mode signal on the data communications bus extending throughout the vehicle and carrying data and address information responsive to the sensed low security threat level so that the alarm controller causes the alert indicator to generate at least one armed mode indication as an emulated pre-warn indication.

18. The pre-warn vehicle security device of Claim 17 wherein the pre-warn indication has a shorter duration than the alarm indication.

19. The pre-warn vehicle security device of Claim 17 wherein the pre-warn indication is audible and has a lesser volume than the alarm indication.

20. The pre-warn vehicle security device of Claim 17 further comprising a housing carrying said pre-warn vehicle security sensor and said pre-warn emulator.

21. The pre-warn vehicle security device of Claim 17 further comprising a signal enabler for enabling said pre-warn emulator to operate using a desired set of signals for communicating with the alarm controller via the data communications bus extending throughout the vehicle and carrying data and address information from a plurality of sets of signals for different alarm controllers.

22. The pre-warn vehicle security device of Claim 17 wherein said pre-warn vehicle security sensor comprises at least one of a motion sensor and a shock sensor.

23. A method for upgrading a vehicle security system in a vehicle comprising a data communications bus extending throughout the vehicle, the data communications bus carrying data and address information thereover, the vehicle security system comprising an alert indicator and an alarm controller interfacing with the data communications bus extending throughout the vehicle

and carrying data and address information and when in an armed mode causing the alert indicator to generate an alarm indication responsive to a high security threat level, the method comprising:

installing a pre-warn vehicle security sensor in the vehicle for sensing a threat level lower than the high security threat level; and

interfacing a pre-warn emulator with the vehicle data communications bus extending throughout the vehicle and carrying data and address information which, responsive to the pre-warn vehicle security sensor, generates at least one signal on the data communications bus extending throughout the vehicle and carrying data and address information so that the alarm controller causes the alert indicator to generate an emulated pre-warn indication different from the alarm indication.

24. The method of Claim 23 wherein the pre-warn emulator, responsive to the pre-warn vehicle security sensor, sequentially generates a high security threat level signal and a disarmed mode signal on the data communications bus extending throughout the vehicle and carrying data and address information.

25. The method of Claim 24 wherein the pre-warn emulator sequentially generates the high security threat level signal and the disarmed mode signal less than about five seconds apart.

26. The method of Claim 23 wherein the pre-warn emulator, responsive to the pre-warn vehicle security sensor, generates a plurality of armed mode signals on the data communications bus extending throughout the vehicle and carrying data and address information.

27. The method of Claim 23 wherein the pre-warn indication has a shorter duration than the alarm indication.

28. The method of Claim 23 wherein the pre-warn indication is audible and has a lesser volume than the alarm indication.

29. The method of Claim 23 wherein the pre-warn vehicle security sensor also senses the high security threat level for causing the alarm indicator to generate the alarm indication.

30. The method of Claim 23 wherein the pre-warn vehicle security sensor further comprises a housing carrying the pre-warn vehicle security sensor and the pre-warn emulator.

31. The method of Claim 23 wherein the pre-warn vehicle security sensor further comprises a signal enabler for enabling the pre-warn emulator to operate using a desired set of signals for communicating with the alarm controller via the data communications bus extending throughout the vehicle and carrying

data and address information from a plurality of sets of signals for different alarm controllers.

32. The method of Claim 23 wherein the pre-warn vehicle security sensor comprises at least one of a motion sensor and a shock sensor.

APPENDIX B - RELATED PROCEEDINGS APPENDIX PURSUANT TO 37 C.F.R. § 41.37(c)(1)(x)

None.

In re Patent Application of:
FLICK
Serial No. **10/648,931**
Filing Date: **AUGUST 27, 2003**
_____/

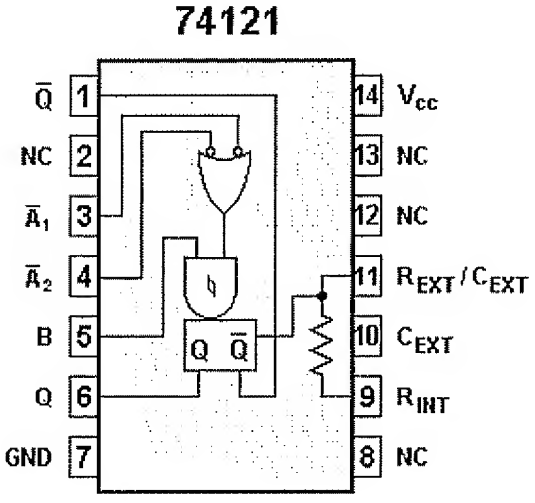
APPENDIX C - EVIDENCE APPENDIX
PURSUANT TO 37 C.F.R. § 41.37(c)(1)(ix)

"74121 or 555 Timer As a One-Shot- 74121 Monostable Multivibrator," available at http://www.utm.edu/staff/leeb/3b3.htm

74121 or 555 Timer As a One-Shot

74121 Monostable Multivibrator

Shown below is the pinout diagram for the 74121. The 74121 has three trigger inputs: A_1, A_2,and B. Depending on the circuit design, any or all of these three pins may be connected to the input trigger signal. The "A" inputs are active low and the the "B" input is active high. The input logic circuit reads: If A_1 OR A_2 goes low AND B goes high the one-shot will fire it's pulse.
Notice also that pins 2, 8, 12, and 13 are not connected to anything inside the IC. Therefore, these pins are labeled "NC" for "No Connection".
The time of the pulse is determined by an external resistor and capacitor connected to R_{EXT}, and R_{EXT}/C_{EXT}. If the value of capacitor connected to C_{EXT} is greater than 1uF the pulse width (tw) is equal to .33 * R_{EXT} * C_{EXT} The 74121 is a retrigerable one-shot.



Monostable Multivibrator
(One-Shot)

The schematic diagram below shows how a 74121 may be wired. Here we are using pin 5 (B) for the input trigger signal which will fire on a high input pulse. When a trigger input activates the device, the Q output will go HIGH as illustrated in the timing diagram. The length of the pulse is determined by the formula Tw = .33 * Cext * Rext.

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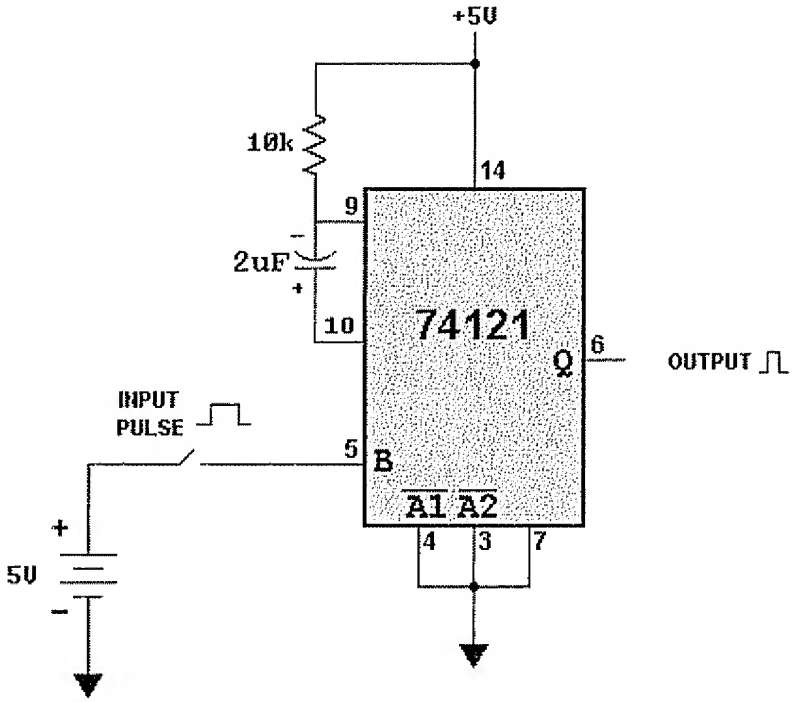
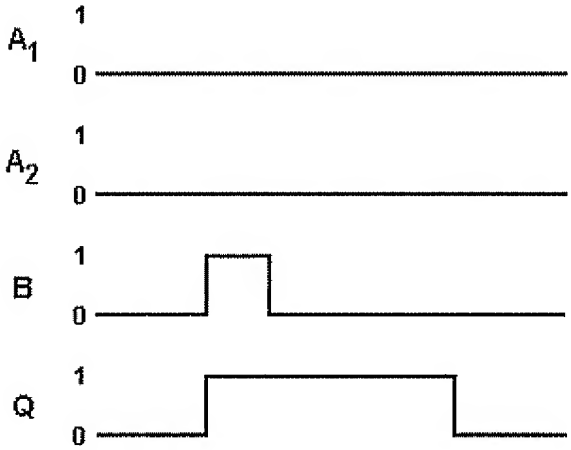


Tw = .33 * 20uF * 10K = .066 Seconds

Timing Diagram



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555 Timer as a Monostable Multivibrator

Shown below is the pinout for the 555 timer and how it can be configured to operate as a monostable multivibrator. This one-shot is non-retrigerable.

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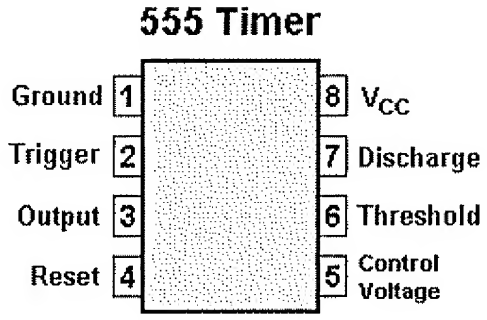

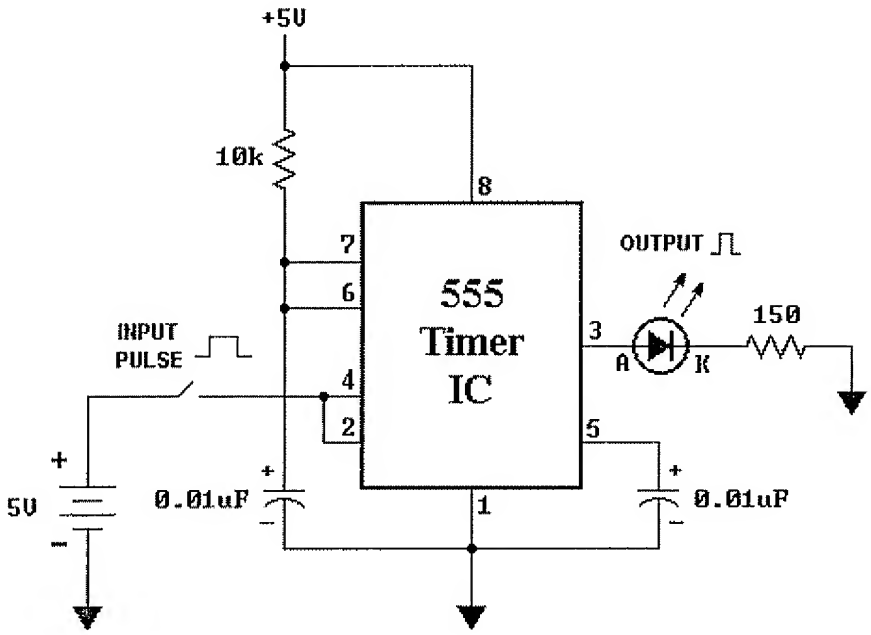

555 Timer as a Monostable Multivibrator

Data Sheet for 74121

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